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ABSTRACT

The director of a child care center at a community college in California developed an earthquake preparedness plan for the center which met state and local requirements for earthquake preparedness at schools. The plan consisted of: (1) the identification and reduction of nonstructural hazards in classrooms, office, and staff rooms; (2) storage of adequate food and water; (3) ensuring the availability of sufficient medical and emergency supplies and communications equipment to maintain a safe and healthy environment for children and staff for 72 hours; (4) training of staff in emergency procedures; and (5) an education component for parents and children. Through the use of a series of situation cards, staff members demonstrated their increased knowledge of earthquake procedures. A parent survey was developed to assess parents' knowledge of the location of the evacuation site and the procedure for reuniting children with their parents. An evacuation drill indicated the children's ability to follow instructions to drop to the floor and proceed to evacuate in an orderly manner. Appendices provide sample surveys, parent information, and earthquake planning guides. (RH)

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THE DEVELOPMENT OF AN EARTHQUAKE PREPAREDNESS PLAN FOR A CHILD CARE CENTER IN A GEOLOGICALLY HAZARDOUS REGION

ED330457

by

Linda Wokurka

Cohort XXXVII

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A Practicum Report Presented to the National Master's Program for Child Care Administrators in Partial Fulfillment of the Requirements for the degree of Master of Science

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1990

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AUTHORSHIP STATEMENT

I hereby testify that this paper and the work it reports are entirely my own. Where it has been necessary to draw from the work of others, published or unpublished, I have acknowledged such work in accordance with accepted scholarly and editorial practice. I offer this testimony freely, out of respect for the scholarship of other workers in the field and in the hope that my own work, presented here, will earn similar respect.

February 8, 1991
Date

Linda Nekrasa
Signature of Student

Abstract

The Development of an Earthquake Preparedness Plan for a Child Care Center in a Geologically Hazardous Region. Wokurka, Linda, 1990: Practicum Report, Nova University, Master's Program for Child Care Administrators. Descriptors: Earthquakes / Natural Disasters / Emergency Programs / School Safety / First Aid / Health Education / Seismology / Crisis Intervention: Day Care / Earth Science / Geology

The previous earthquake preparedness plan was not adequate according to new state and local guidelines developed in the aftermath of numerous recent major earthquakes in California.

The author developed an earthquake preparedness plan for the child care center which was consistent with the new guidelines. This plan consisted of the identification and reduction of non-structural hazards in classrooms, the office and staff rooms, storage of adequate food and water, medical and emergency supplies plus communications equipment to maintain a safe and healthy environment for children and staff for 72 hours, training of staff in emergency procedures, and an education component for parents and children.

Through the use of a series of situation cards and corresponding questions staff members demonstrated their increased knowledge of earthquake procedures. A parent survey was developed to assess the parents' knowledge of the location of the evacuation site and the procedure for reuniting children with their parents. An evacuation drill indicated the children's ability to follow instructions to drop to the floor and proceed to evacuate in an orderly manner.

Appendices include sample surveys, parent information and earthquake planning guides.

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Chapter 1

INTRODUCTION

The child care center is located on the campus of a community college in an urban area near several major cities. It is the purpose of the center to provide child care services for the college campus students, as well as staff and faculty, and the surrounding community. The center accepts children two years six months to six years of age Monday through Friday, 7:30 AM to 6:00 PM. Between the hours of 4:00 PM and 10:00 PM Monday through Thursday, a special Evening Child Care Program has been designed for children two years six months through twelve years of age. Priority registration is given to college students with college staff and faculty receiving second priority and finally, community families may enroll. Tuition assistance is available to student parents who demonstrate financial need.

The day program consists of three classrooms of preschool children with 24 children in each classroom. The youngest children, ages two years six months to three years six months are grouped together in one classroom. Children three years six months to six years are cross-age grouped in the remaining classrooms.

Teachers at the center hold early childhood teacher certificates. A ratio of one teacher to every 12 children is

maintained in each classroom. The center is licensed by the state for 72 children and has a total enrollment of 138 families. The center is affiliated with the division of Applied Design and Human Studies.

The center offers a warm, happy and healthy environment which promotes exploration and experimentation for each child. Classroom activities are designed to provide opportunities for:

* Multi-sensory "discovery" of the child's world
* Fostering the development of language skills
* Developing social competencies
* Building self-esteem through respect and recognition

Management of the center is the responsibility of the director who reports to the dean of Applied Design and Human Studies. The author of this practicum is the director of the child care center. An advisory board comprised of child development professionals, college administrators, parents and a representative of the center teaching staff makes recommendations to the director on issues relating to the center program and its policies.

The function of the director is to plan, coordinate and direct the operations of the center; develop and implement a variety of programs to meet the educational, health and social service needs of the children and parents served by the center; supervise and evaluate the performance of assigned staff.

Representative duties include planning, organizing and directing the activities, curriculum and staffing of the child care center; organizing maintenance and nutritional programs; assuring that facilities are maintained in a safe, orderly and sanitary condition; communicating with a variety of social service and government agencies to coordinate efforts and make referrals.

The director also communicates with families to discuss their child's progress, problems and schedules, conducts admissions interviews and holds other parent conferences.

Chapter 2

STUDY OF THE PROBLEM

Problem Definition

The previous earthquake preparedness plan for the child care center was not adequate according to new state and local guidelines as of March 30 1990. At this time the child care center had a disaster plan which was developed primarily to ensure safety in the case of a fire. Specific hazards and concerns associated with a major earthquake are unique and require additional safeguards in order to protect young children who cannot care for themselves.

In the aftermath of several major earthquakes in California in recent years the state has established new guidelines for school earthquake education and preparedness.

Evidence

In March 1990 the new guidelines for earthquake preparedness for schools from the California Governor's Office of Emergency Services became available to the child care center. Using this information a review of the child care facility and the center's earthquake procedures was made by the director and a team of representatives from local education and emergency agencies. The advising team members were the director of campus security, the city fire departments' emergency service specialist, the college

districts' disaster plan consultant and a university professor of emergency management.

The results of this review indicated numerous non-structural and classroom equipment hazards throughout the building. Also, the supplies stored for a disaster were found to be inadequate for the period of time during which emergency assistance is likely to be unavailable.

The teachers of the center were appraised of the new guidelines for earthquake preparedness at a staff meeting where information was presented from several school districts which experienced damage from recent major earthquakes.

A series of four situation cards with questions relating to appropriate procedures were used to gain a perspective on the knowledge of staff with regard to their responsibilities during and earthquake (Appendix A). There were 17 questions given to nine teachers. The responses to those questions are shown in Table 1 on page six. There were 37 correct responses out of a possible 153 responses (24% correct). The teachers' responses showed that they needed more information in order to perform tasks and carry out procedures as stated in the most recent state guidelines. At a subsequent staff meeting teachers were given the results of their answers to the situation cards. Staff members indicated a desire to participate in a program of education and planning for greater earthquake preparedness. The following comments were made by staff members: "I'm glad this is being done", "This is a good

idea", "We need to be organized. Each of us should have designated jobs".

Table 1

Staff Questionnaire Response

Question Number	Teacher Identification Number								
	1	2	3	4	5	6	7	8	9
1	I	I	I	I	I	I	I	I	I
2	I	I	I	I	I	I	I	I	I
3	I	I	I	I	I	I	I	I	I
4	I	I	I	I	I	I	I	I	I
5	I	I	I	I	I	I	I	I	I
6	C	C	C	C	C	I	I	C	C
7	C	C	C	C	C	C	C	C	C
8	C	I	C	C	I	C	I	I	C
9	I	C	C	I	I	I	I	I	I
10	I	C	I	I	C	I	C	I	C
11	I	I	I	I	I	I	I	I	I
12	I	C	C	I	C	I	C	I	I
13	I	I	I	I	I	I	I	I	I
14	I	I	I	I	I	I	I	I	I
15	I	I	I	I	I	I	I	I	I
16	C	C	I	C	I	I	C	I	C
17	I	I	C	I	I	I	I	I	I

C = Correct I = Incorrect

Analysis of Causes

The guidelines for school earthquake preparedness are based on information gathered after several recent major earthquakes in the state. These guidelines include new and more stringent requirements regarding the securing of non-structural equipment and classroom materials and the storage of adequate food, water and emergency equipment for 72 hours.

The review of the facility by the team of earthquake advisors revealed numerous non-structural hazards in classrooms and the staff room. Bookcases, storage cabinets and cupboards holding classroom materials were not secured and could have fallen or slid in the event of an earthquake. Large glass windows of non-tempered glass in the classrooms might shatter or break in large shards. There were many objects in the classrooms stored at or above the level of a child's head which might have fallen and caused injuries in an earthquake.

The assessment of the provisions stored for emergencies by the earthquake advisory team showed two major deficiencies. First, the supply of water was inadequate to maintain a population of children and staff for a reasonable period of time. Secondly, at this time there was no available equipment which could have been used to establish an emergency communication system to receive emergency information or transmit messages for assistance.

An analysis of the teachers' correct answers to the

situation cards indicated that the staff only knew when and where to evacuate their classroom, procedures for accounting for children at the evacuation site and methods to use to calm children. These procedures are practiced regularly during monthly fire drills, therefore, the staff displayed competency in these activities.

Teachers were unable to give appropriate responses to the questions regarding alternate sources of power and communication, search and rescue operations and how to contact emergency response agencies. These procedures are unique to earthquake preparedness and are not included as part of the fire drills. Consequently teachers have not had occasion to learn and practice these activities, although they are now necessary in order to carry out the new guidelines for earthquake safety.

In analyzing the previous child care center earthquake preparedness plan it became apparent that an important element which was missing was the education of parents and the children at the center. In the event of a major earthquake parents previously did not know the location of the center's evacuation site or procedures for being reunited with their child. Children did not have a basic understanding of what might occur during an earthquake. Children had not been taught to follow their teachers' directions during and immediately following an earthquake.

Relationship to the Literature

Experts point to the certainty of damaging earthquakes in California. In 1988 the Working Group on California Earthquakes Probabilities, convened by the U.S. Geological Survey, determined the recurrence times and probability of earthquakes along major fault segments. The probability of an earthquake with a magnitude of 7.5 or larger occurring in Southern California in the next 30 years is 60 percent. In central California resources have concentrated on the Parkfield fault, identified as more than 95 percent likely to sustain an earthquake of 6.0 magnitude by 1993. Earthquakes of 7.0 magnitude or larger, each with a probability of 20 to 30 percent within the next 30 years are expected at six locations in southern California and three locations in northern California. Efforts are being made to discover specific precursors to allow short term prediction of earthquakes in these regions (U.S. Geologic Survey Pamphlet, 1989).

A major earthquake may occur with out warning during school hours. Such a disaster would cause widespread damage and secondary hazards such as ground failure, fires and flooding. These problems may disable transportation, communication and emergency medical assistance systems (California Office of Emergency Services, Earthquake Preparedness Checklist for Schools). Schools will need to be prepared and fully self-sufficient in order to care for children and staff until parents or outside assistance

arrives.

Studies completed after two major earthquakes have documented damage in schools, which, although they had basic disaster plans, the plans did not include specific planning or hazard reduction for earthquakes.

On Monday May 2, 1983 at 4:42 PM an earthquake with a 6.5 magnitude on the Richter Scale struck northern California. Immediately thereafter an after shock of 5.0 struck the area. Reports of damage in school rooms stated that file cabinets flew across the room, their latches did not hold; bookcases fell over; free standing cupboards, cabinets and shelving fell. Storage cabinets that had been "molly" bolted to walls, but not into studs pulled out of the walls and fell to the floor. Typewriters flew around the room and movie screens became projectiles. Windows throughout the school broke in direct proportion to the size of the windows, small windows performed much better than larger ones. In the library of a junior high school with 8' X 8' non-tempered glass windows on two walls, all windows "imploded" and completely littered the room. The floor tile and wooden furniture were gouged with flying glass (E. Robert Bulman, San Bernardino County Schools, California, The Coalinga Earthquake, A Report On Schools, 1983).

Child care centers located in northern California were surveyed after the Loma Prieta earthquake magnitude 7.1 of October 1, 1989 by the County Child Development Resource

Center Agency. Almost every center reported some damage, the most common being cracks in walls, ceilings, foundations, broken windows and water leaks (Child Development Resource Center Newsletter February 1990, Santa Cruz County, California).

Surveys conducted after the October 1, 1987 Whittier Narrows earthquake (magnitude 5.9) Whittier, California indicated the importance of having a comprehensive earthquake plan which is practiced regularly. During the Whittier Narrows earthquake eight of eight child care centers interviewed had to evacuate their centers. Six of the eight centers interviewed reported that even though they had an earthquake plan, staff were unable to recall it during the earthquake. None of these six centers had practiced their plan (Earthquake Preparedness Activities for Child Care Providers, Bay Area Regional Earthquake Preparedness Project, 1988).

Earthquake experts use 72 hours as a period possibly requiring self sufficiency after a major earthquake. Schools are encouraged to use this figure as well, recognizing that they would probably not have their entire population in attendance for that long. Many parents would reach their children before the end of the day. However the major southern California earthquakes in Long Beach (1933), San Fernando (1971) and Whittier (1987) have provided valuable information regarding the importance of maintaining adequate

food and water plus other emergency supplies for 72 hours. Each of these earthquakes caused severe damage to roads, buildings and dams resulting in family members being separated for more than two days. The number of emergency situations during these earthquakes made it impossible for emergency assistance agencies to reach all the disaster incidents (Los Angeles City Fire Department Disaster Preparedness and Community Response Team Program, 1989).

In 1984 the Governor of California signed Assembly Bill 2786 which required that all schools establish an earthquake emergency system for their facility. Several major earthquakes since that time have resulted in research programs to develop new guidelines to facilitate schools in developing a comprehensive plan which would assure that students and staff act instinctively and correctly when an earthquake strikes.

Chapter 3

GOALS AND OBJECTIVES

It was the goal of this practicum to develop a comprehensive earthquake preparedness plan for the child care center which would be adequate according to new state and local guidelines.

In order to achieve this goal the following objectives were projected:

1. By the end of a ten week implementation period non-structural earthquake hazards with the exception of windows in all classrooms and the staff room will be reduced to a safe level as determined by an advisory team of representatives from local education and emergency agencies.

2. By the end of a ten week implementation period a procedure for reducing the earthquake hazard caused by large floor to ceiling windows in all classrooms will be deemed feasible by an advisory team of representatives from local education and emergency agencies.

3. By the end of a 10 week implementation period the child care center will have secured adequate food and water, medical supplies and emergency communications equipment to provide self sufficiency in caring for

children and staff for a period of 72 hours as determined by an advisory team of education and emergency agencies.

4. Using a series of four earthquake preparedness situation cards (Appendix A) the child care center staff will be able to correctly answer all questions relating to emergency procedures by the end of a ten week implementation period. The situation cards were chosen as a method of evaluation because they would indicate not only the aspects of emergency preparedness in which the staff were knowledgeable but also the specific procedures which teachers did not understand.

5. By the end of a ten week implementation period 90 percent of the parents will correctly communicate their knowledge of the center's earthquake preparedness plan by answering questions on a parent information card survey (Appendix B) with a 100 percent accuracy. The survey required parents to recall and identify the specific location of the evacuation site and procedures for being reunited with their child. The survey was designed to document any critical information which had not been understood by parents, as well as that information which had been clear to them.

6. During an earthquake drill 90 percent of the children

at the child care center will accurately follow their teacher's directions to drop to the floor and then proceed to evacuate in an orderly manner as determined by the observation of the city fire department emergency services specialist.

Recruiting the advisory team as a component of the evaluation of these goals offered the child care center the expertise of professionals in the area of earthquake preparedness. The nature of the activities of mitigating non-structural hazards, storing adequate emergency supplies and performing an earthquake drill required a unique form of assessment. The members of the advisory team provided an evaluation of these activities in an efficient form.

Chapter 4

SOLUTION STRATEGIES

Information Collection

The predicted increase in earthquakes has resulted in a recent government sponsored program to assist schools in earthquake preparedness planning which will meet the new state and local guidelines for earthquake safety. While the majority of the information has been structured to the elementary through high school level, two programs have been designed to address the unique considerations of preschools.

The guide developed by the Bay Area Regional Earthquake Preparedness Project (BAREPP) encourages the adaptation of a workable earthquake plan by involving staff in the planning process. This document states that active staff participation increases the chance that procedures will be remembered during an earthquake emergency. Eight activities are presented to foster the development of realistic procedures which take into account the staff's ability to implement these procedures. This document stresses the importance of motivating staff to view ongoing earthquake planning and practice as essential for the safety and survival of children.

A second government sponsored guide has been developed by the Southern California Earthquake Preparedness Project (SCEPP). Within the planning component of this resource guide individual staff assignments are delineated to insure that the

essential functions of safety assessments, first aid, food and survival supplies and communications included in an earthquake plan will be coordinated immediately after an earthquake.

Specific information is provided here on the identification and mitigation of non-structural hazards in preschools. A list of commonly found hazards in preschools from this guide incorporates diagrams of instructions for securing large equipment to the floor or wall. Large windows located in a classroom or work area are included on this list of hazards. Two treatments suggested as a means of minimizing this hazard are to replace the glass with tempered glass or to apply a shatter-resistant film over existing windows.

An alternate source of information regarding earthquake hazards published by the Office of the State Architect offers a very thorough checklist of non-structural hazards known to be dangerous or problematic in earthquakes. School administrators may use the checklist as they survey the school site. After each hazard listed there is either a brief solution or a number reference which refers to illustrations showing how to restrain or anchor non-structural elements and thereby reduce their hazardousness (Identification and Reduction of Non-structural Earthquake Hazards in California Schools).

Educators agree that a key component of any school earthquake preparedness plan is student education. Based on the theories and research of Jean Piaget, education

psychologists Franklin and Biber stress the importance of learning being an active process where the child is able to explore, manipulate materials and act on the environment (Total Learning).

Curriculum materials produced by the National Science Teachers Association offers a series of hands on experiences for kindergarten through sixth grade students. Many of these lessons can be adapted for use with preschool age children. The units relating to defining an earthquake and recognizing an earthquake have incorporated numerous activities which would be appropriate for helping three to five year olds understand earthquakes. The Safety and Survival unit provide instructions for a simulated earthquake drill which gives children the opportunity to practice evacuation procedures. The accompanying discussion suggested for teachers to use with children allows children to verbalize feelings of fear and separation from family (Federal Emergency Management Agency, FEMA).

Earthquake information provided by the California Office of Emergency Services suggests that before an earthquake drill can by enacted an inventory of emergency supplies must be procured and stored in accessible locations. These supplies can be categorized as search and rescue equipment, first aid supplies, shelter and sanitation materials, food and water, and communications equipment. Each classroom should contain an emergency kit stored near the primary exit which includes

a first aid kit, class roster, and basic survival equipment. A full supply of emergency equipment and food and water must be stored in an area designated as safe from hazards and easily accessible to the evacuation site. Tools and instructions for shutting off the utilities, communication equipment and provisions for establishing sanitation facilities should be inventoried every six months and replaced or supplemented with new materials as needed (Guidelines for School Earthquake Safety Planning, California Office of Emergency Services).

School earthquake planning experts point out the necessity of involving parents in developing an earthquake plan. Educating parents to help them understand the importance of taking safety precautions and gaining their cooperation in providing emergency supplies is a basic component of an effective earthquake program.

Telephone conversations with a local school provided suggestions for recruiting parent support. Parents may be asked to supply a mini emergency kit for their child. Parents may also volunteer to assist in areas such as reduction of earthquake hazards or with earthquake drills.

The procedures for reuniting children with their families suggested by SCEPP requires children to be taken from the child care center to their home by government officials. Alternately, the California Office of Emergency Services and local city fire department emergency service specialists

recommend that children be kept at an evacuation site until they are picked up by a parent or someone listed on an emergency release form.

Solution Strategy

There were five integral components which were implemented in order to develop an earthquake preparedness plan for the child care center. Staff members participated in decisions and the completion of each component to ensure their knowledge and understanding of all aspects of the earthquake plan. An advisory team of representatives from local emergency response agencies provided support throughout the implementation period by making recommendations and documenting the satisfactory completion of each component.

The first component involved the identification and reduction of non-structural earthquake hazards. Teachers used the List of Common Earthquake Hazards (SCEPP) as a resource in identifying and reducing hazards in their classrooms. The checklist from Earthquake Hazards in Schools (State of California Office of Emergency Services) was used by the administrative staff to identify hazards in the areas of the building used by adults.

Each of these lists offered suggestions for reducing or eliminating hazards, some of which could be performed easily and immediately. Other hazards which required a more difficult procedure were placed on a master list to be completed by volunteers.

In order to reduce the hazard caused by the large windows in the classrooms information was gathered on the feasibility of replacing the existing windows with tempered glass or alternately, applying a shatter resistant film. Written requests for funding to complete the window treatment were sent to the college, the associated student body and community organizations.

Staff training was a key element in the development of an earthquake plan. All staff at the child care center participated in training sessions to accommodate change in scheduling and attendance. Policies and staff assignments were accomplished through a group decision making process. The procedures for involving staff from the BAREPP Earthquake Guidebook formed a basis for motivating staff participation. The staff assignments to be performed immediately after an earthquake were modeled after those listed in the SCEPP, Preschool Earthquake Preparedness Guidebook. These assignments consisted of safety coordinator, first aid coordinator, supplies coordinator, communication coordinator and operations coordinator.

An evaluation of the staff's knowledge of earthquake procedures was accomplished through the use of four situation cards (Appendix A). These cards were originally used to assess the staff's knowledge before training occurred. Questions regarding each situation were answered in written form. A comparison of the final test scores after training was

compared with the baseline test data taken before training to determine the improvement.

The third component of the earthquake plan was the securing of adequate food, water and emergency survival supplies to last 72 hours. Both of the government projects provided a guide for the securing of these supplies. The supplies list from the State Office of Emergency Services offered information about organization and the storage location for supplies. These resource lists were compiled to develop a master list of supplies (Appendix C) to fulfill the requirements of this center. Parents were asked to provide $2.00 to be used for the purchase of emergency supplies and a mini emergency kit for their child, as do the parents of children attending a local school. This kit included a change of clothes, a "Space" or hypothermia blanket, three small pre-packaged food items which can be stored for one year (cheese and cracker packs, granola bar, fruit roll, package of nuts, raisins or an individual size can of tuna or soup), and any required medication plus a doctor's permission note (St. Philip Benizi School)

The earthquake advisory team met at the center to assess the adequacy of the earthquake emergency supplies. At this meeting the advisory team also reviewed the procedures for implementing the earthquake plan and the measures taken to reduce non-structural hazards at the center.

Informing parents of the new earthquake plan was the

fourth factor to be considered. The monthly newsletter originally provided parent information about the earthquake plan and offered opportunities for their involvement through volunteer work necessary for the completion of the project. Subsequent letters to parents provided specific information about earthquake safety at home and school and evacuation procedures and polices for being reunited with their children (Appendix D). Parents were also asked to provide an emergency kit for their child.

In order to ascertain their level of understanding of these new emergency policies and procedures, a parent response survey was given to all parents at the center.

The final component of the earthquake plan involved preparing the children for earthquakes. In doing this developmentally appropriate curriculum materials were adapted from the Federal Earthquake Management Association (FEMA) Earthquake Curriculum. These activities were chosen by teachers at the center and were presented to the children in their classes. Through these activities children gained an elementary knowledge of the causes of earthquakes. Most importantly, these activities helped the children understand what happens during an earthquake and what procedures they are to follow. This curriculum provided instructions for having children practice dropping to the floor and evacuating the building during a major earthquake.

An earthquake drill was coordinated with staff, parents,

and a member of the emergency advisory team. The drill provided a means of evaluating the children's knowledge of procedures during an earthquake and the evacuation immediately afterward. The advisory team member documented the evaluation.

This drill and subsequent practices were enacted to ensure that teachers and children would remember the plan during a real earthquake emergency.

Implementation Plan

Task 1: Identify and reduce non-structural earthquake hazards

Step 1: The teaching staff was given the list of common earthquake hazards (SCEPP). Staff was asked to use this list to check the hazards they found in their classrooms and note additional hazards not listed. Assistant directors were given Earthquake Hazards in Schools and asked to identify all hazards in staff rooms and offices. Identified hazards were discussed with staff. A master list of hazards was developed (Appendix E).

Responsible Individual: The author provided staff members with the appropriate list for their area of responsibility. Staff identified hazards and participated in the development of a master list.

Time-Line: Week One

Step 2: Plans were developed to reduce identified hazards with staff. A determination was made as to which plans could be implemented by staff and those which required

assistance. A designation was made for each staff member to carry out specific hazard reduction plans.

Responsible Individual: The author assigned hazard reduction plans to staff, set a deadline of one week and monitored completion of these tasks.

Time-Line: Week Two

Step 3: Met with boy scout troop to request assistance with hazard reduction plans which could not be performed by staff. A date was set for this work to be accomplished.

Responsible Individual: The author contacted the boy scout troop and met with scout representative to plan a strategy for hazard reduction.

Time-Line: Week Two

Step 4: Boy scout troop with volunteer parents began hazard reduction. The task was completed on the two following Saturdays.

Responsible Individual: Author acted as coordinator of the work.

Time-Line: Weeks Four, Five and Six

Step 5: Information was gathered regarding appropriate window treatment to reduce the hazard of large windows in the classrooms. This information included a comparison of the feasibility of replacing windows with tempered glass or applying a shatter resistant film to the existing windows.

Responsible Individual: The author obtained information

regarding tempered glass and the application of shatter-proof film.

Time-Line: Week Two

Step 6: Letters were written to request funding required to reduce hazard caused by large windows. Letters were written to the college administration, associated student body and to community groups.

Responsible Individual: The author wrote the letters to seek funding for the window treatment.

Time-Line: Week Three

Step 7: Earthquake advisory team met to perform an interim check of the reduction of non-structural hazards at the center and assisted in the development of a plan to reduce window hazards.

Responsible Individual: Author scheduled this meeting with the advisory team.

Time-Line: Week Six

Step 8: Met with associated student representative to discuss funds for window treatment to become available in December, 1990.

Responsible Individual: Author scheduled this meeting with the associated student representative.

Time-Line: Week Six

Step 9: Advisory team inspected the center for final approval of hazard reduction.

Responsible Individual: Author scheduled this meeting.

Time-Line: Week Eight

Task 2: Train staff in earthquake procedures.

Step 1: Staff was given Staff Assignment Guide (SCEPP). This model was used to identify earthquake procedures which address the safety concerns of this center. Staff assignments were determined for center personnel.

Responsible Individual: The author provided Staff Assignment Guide for staff and approved determination of staff assignments.

Time-Line: Week Three

Step 2: Training was provided in the identified necessary earthquake procedures for all staff.

Responsible Individual: Training in each area was provided by the following individuals:

Evacuation - Author
Search and Rescue and Building Safety - Emergency specialist, fire department
First Aid - Campus health director
Supplies - Author
Communications - Campus security director
Operations Coordination - Author

The author scheduled these training sessions.

Time-Line: Weeks Four and Five

Step 3: Staff were given four situation cards (Appendix A). Staff wrote answers to questions related to earthquake situations listed. Data was compiled regarding accuracy of answers and compared with baseline data taken before training.

Responsible Individual: Author provided situation cards and

developed the comparison of baseline test data with final test data.

Time-Line: Week Seven

Task 3: Secure adequate emergency supplies to insure safety of staff and children for 72 hours.

Step 1: Sample supply lists were collected. A master list of necessary supplies for this center was developed.

Responsible Individual: Author obtained sample lists.

Time-Line: Week One

Step 2: Letters were written to parents requesting each family to provide a mini emergency kit for their child. This kit was to be delivered to school within ten days. Parents were asked to furnish other common supplies from the master list.

Responsible Individual: The author produced the letter. Assistant directors and typist stored the kits in large duffle bags (one for each classroom) and sent reminder notes to parents who had not supplied a kit at the end of ten days. A second reminder notice was sent to those parents who still had not supplied a kit for their child.

Time-Line: Week Three

Step 3: Met with campus security director to request a two-way radio unit be permanently located at the center for emergency communications. It was determined that a new two-way radio would have to be purchased as the campus no longer had extra radios in working order.

Responsible Individual: Author made this request. Two-way radio was placed on master list of supplies to be ordered.

Time-Line: Week Three

Step 4: Emergency supplies and equipment which had not been previously donated by parents were purchased with the exception of drinking water and the two-way radio.

Responsible Individual: Author submitted purchase orders to purchase materials.

Time-Line: Week Four

Step 5: Met with campus parent club to discuss event to raise funds in order to purchase two-way radio and packaged drinking water.

Responsible Individual: Author scheduled this meeting.

Time-Line: Week Four

Step 6: Supplies were packaged and stored.

Responsible Individual: The author and assistant directors packaged and stored supplies.

Time-Line: Week Seven

Step 7: A "walk through" was scheduled with staff members to inform them of the supplies and where they were stored (classroom, office, outdoor storage room). Staff practiced transporting supplies to evacuation site using both primary and secondary exits.

Responsible Individual: The author and assistant directors informed staff of supplies and storage location. The

author coordinated the practice session.

Time-Line: Week Eight

Step 8: Advisory team assessed adequacy of emergency supplies and equipment.

Responsible Individual: The author scheduled this meeting. Author observed the evaluation.

Time-Line: Week Eight

Task 4: Parents were educated to the earthquake preparedness plan.

Step 1: Parents were informed of the new earthquake plan through the monthly newsletter and their support and active involvement was requested.

Responsible Individual: Author produced the newsletter article.

Time-Line: Week One

Step 2: An emergency plan volunteer chart was provided at center for parents.

Responsible Individual: Author developed format for chart. Parent volunteer produced chart.

Time-Line: Week One

Step 3: A letter was written to parents giving detailed information regarding earthquake evacuation and reunification procedures and policies. Return signatures were requested to indicate that parents had read the letter.

Responsible Individual: Author produced this letter.

Time-Line: Week Five

Step 4: A parent survey was developed to evaluate parents' knowledge of the new earthquake policies at the center.

Responsible Individual: Author produced this survey.

Time-Line: Week Five

Step 5: Parents filled out survey at center which will evaluated their knowledge of the new earthquake policies.

Responsible Individual: Assistant directors provided surveys to parents, collected them daily and returned them to the author. The author compiled the results of survey.

Time-Line: Week Seven

Task 5: Preparing the children for a large earthquake.

Step 1: Copies of curriculum material from the FEMA Earthquake Curriculum were presented to teachers. Teaching strategies were developed for each age group on earthquake identification, safety and evacuation procedures.

Responsible Individual: The author presented this information to teachers, providing copies of the curriculum materials listed.

Time-Line: Week Six

Step 2: Teachers presented earthquake curriculum materials to children.

Responsible Individual: Teachers presented earthquake information to the children. Author observed and recorded children's responses.

Time-Line: Weeks Seven and Eight

Step 3: A drill was planned to be held in order to assess the children's knowledge of procedures during an earthquake and evacuation.

Responsible Individual: The author coordinated the plans for the drill with parents, staff and the advisory team representative.

Time-Line: Week Eight

Step 4: Held evacuation drill. Staff performed assignments in order to set up an evacuation site, determine building safety, prepare to administer first aid, offer food. Parents participated in a practice procedure of reunification with children. The advisory team representative observed the procedures and evaluated the children's actions.

Responsible Individual: The author performed the duties of Operations Coordinator for this drill and as such, was involved in overseeing all aspects of the drill.

Time-Line: Week Nine

Step 5: Met with advisory team representative to evaluate drill directly after the drill took place.

Responsible Individual: Author met with advisory team representative to discuss evaluation.

Time-Line: Week Nine (Immediately after drill)

Follow-on

After the completion of this practicum the child care center now has a documented earthquake preparedness plan which conforms to state and local guidelines. The author has informed other child care centers in the community of the plan in an effort to involve colleagues in the process of preparing their facility for earthquakes. Communication with others has also created an opportunity to update and revise existing plans as new information has become available.

Although earthquakes are most common in California and Alaska, they have shaken all states. Earthquakes of a 7.1 magnitude or larger have occurred in Alaska, California, Hawaii, Idaho, Missouri, Tennessee, Montana, Nevada, South Carolina, Washington and in Quebec, Canada, just northwest of Maine. Earthquakes of smaller magnitudes have been documented throughout the United States (U.S. Geological Survey Pamphlet, 1989). Clearly, earthquakes are a nationwide problem.

Child care administrators in all states could benefit from information regarding emergency procedures such as are included in this earthquake preparedness plan. The planning process recorded in this practicum which leads to the development of an emergency plan for earthquakes could become available to other child care centers through the National Association for the Education of Young Children.

Chapter 5

RESULTS, CONCLUSIONS AND RECOMMENDATIONS

The implementation of this practicum has resulted in a comprehensive earthquake preparedness plan for the child care center which is adequate according to state and local guidelines. A team of representatives from local education and emergency agencies provided assistance in determining potential earthquake hazards as well as valuable information in designing the total emergency plan.

The first component of this plan was the reduction of non-structural hazards in classrooms and the staff rooms. After participating in the identification of earthquake hazards in their classrooms teachers were able to easily reduce or eliminate hazards such as removing items from high cabinets and shelf tops, relocating furniture and equipment so as not to block exits and removing hanging plants.

The author met with a boy scout troop to request their assistance in mitigating those hazards which could not be done by the child care center staff. Three types of hazards which required correction were agreed upon:

1. bolting down free standing cabinets and equipment in classrooms and the staff rooms using L-brackets. Furniture was bolted either to the floor or to wall studs. The water heater was bolted to the wall with steel plumbers tape wrapped one full turn around the tank plus L-brackets bolted from the top of the water

heater to the wall studs.

2. building wood restraining rails on wall mounted shelves, and wood "fences" on three sides of the hollow block storage carts in which blocks are stored approximately two feet above the side of the cart. Since the carts are on castors with locks, when the blocks are not being used, the carts are wheeled into place with the open side against the wall and the wheels are locked.
3. securing large or heavy desk and table items such as telephones, computer, calculator, fish tank, and the doll house with industrial strength velcro.

While adult scout advisors were present to help, the scouts were supervised by one young man who used this work for his Eagle Scout Project.

The large windows in the classrooms required special consideration in the hazard mitigation process. The author met with a local glass and window company to discuss the feasibility of replacing the existing windows with tempered glass or applying a shatter proof film to the existing windows. It was found that the application of the shatter proof film would not only be less expensive but would also offer a safer environment. While the safety glass would only shatter into many small pieces rather than large shards, the small pieces of glass would still fall out into the classroom. The potential hazard of glass falling or flying into the

classroom would be eliminated by the application of the protective film.

Letters were written to several community organizations as well as campus support groups asking for funding to cover the cost of the safety window treatment. The campus associated student senate responded by offering to hold a fundraising event to secure the funds for the window treatment. It is expected that the shatter proof film application can be completed by the end of January, 1991.

The emergency specialist from the city fire department performed the final review of the reduction of non-structural hazards at the child care center. His findings indicate that all potential hazards have been reduced to a safe level in the classrooms as well as the office and staff rooms. His recommendations include consistent safe storage of all items, securing any new furniture or equipment to the floor or wall and instructing new staff in the importance of ongoing hazard mitigation.

The second component of the earthquake plan was the securing of adequate food and water, medical supplies and emergency communication equipment for staff and children for a period of 72 hours. Numerous sample supply lists were collected from emergency organizations, elementary school districts and state government agencies. From these lists a master list was developed which was appropriate for the age

and number of children served at the child care center. Parents were asked to furnish common food and medical supplies as well as a mini emergency kit for their child. Parents and staff members were also asked to provide $2.00 each to be used for the purchase of needed tools and other less common emergency equipment.

While parents readily supplied the common emergency supplies and the $2.00 for each child, many parents were slow to bring in their child's mini emergency kit. As reminders were sent out parents told us they were not finding the time to purchase the required "space" or hypothermia blanket available at local sporting goods stores, although they had all the other required items. Parents were sent a second reminder and encouraged to bring in all other items requested for the emergency kit and then add the "space" blanket as soon as possible In reviewing this information, a possible solution could be for the child care center to purchase "space" blankets for which parents could reimburse the child care center. This would assure all children of having the necessary equipment in the case of a major earthquake.

It was anticipated that the campus would be able to provide the child care center with the two-way radio, however at the time of the implementation of the earthquake plan there were no longer any two-way radios in working order available. An alternative plan had to be devised for the purchase of the two-way radio. Because this radio must work in conjunction

with the radios used by the campus security force, the two-way radio to be purchased for the child care center added a substantial cost to the amount budgeted for the earthquake plan.

The final item to be considered to complete the storage of adequate emergency supplies was the drinking water. Considerations of shelf life, weight of the units and cost were factors in choosing the source of emergency drinking water. The team of advisory members recommended the purchase of individual boxed drinking water which is packaged in a similar manner to individual boxed juices. This product offers a five year shelf life, does not require large storage space and is easily transported .

The cost of the drinking water and the two-way radio exceeded the budget allotted for emergency supplies. As letters requesting funding support for the purchase of these items were received by campus organizations, the campus parent club offered to hold an event to raise the funds in order to purchase the water and the two-way radio. They anticipate the purchase of these items by the end of fall semester, December, 1990.

An unexpected benefit occurred in the form of added support from the campus parent club. As their assistance was requested in providing funding for emergency equipment, this group became more active than in recent years. Not only has the group fulfilled its fundraising commitment but has found

numerous other areas of support which are currently benefitting the child care center.

At the suggestion of the advisory team of emergency specialists the storage of emergency supplies was designated to be placed in more than one location. The children's individual mini kits were placed in a large duffle bag and located next to the primary exit of each classroom. Additional items placed in each duffle bag included a small basic first aid kit, whistle, children's name tags, class roster, teacher's mini kit and a flashlight with batteries. Other emergency equipment was placed in a small, locked, outside storage building close to the evacuation site. Large trash bins with wheels attached were used for storing the food and medical supplies. The wheels on the trash bins provide an easy method of quickly moving the equipment from the storage building. The two-way radio will be kept in the director's office in order to charge the battery on a routine basis as is required for operation.

The advisory team of emergency specialists has stated that the emergency supplies now stored at the child care center are sufficient to maintain the health and safety of all children and staff for a period of 72 hours. They have recommended that a review of the supplies be completed every six months with food items being replaced on a yearly basis.

Educating the child care center staff was the next component of the earthquake plan. A series of four earthquake

preparedness situation cards were used to assess the teachers' knowledge of emergency preparations and responses prior to the development of the earthquake plan and again at the end. The objective of the proposal for the earthquake plan was that teachers would be able to answer all of the questions correctly.

Teachers were informed of each step of the plan and participated as a group in making decisions and discussing possible problems. Meetings were held to review procedures for search and rescue, communication with campus security and first aid techniques. Using the Staff Assessment Guide (SCEPP) the child care center staff discussed possible staff assignments during an evacuation. It was decided that teams of at least two people would be the best way to insure that someone would be available for each of the assignments. A full time teacher was teamed with one or two part time teachers for each job to be done. In the case of the evening program, although the jobs were divided in terms of responsibility, the two teachers will work together as a team whenever possible.

As the staff became involved in the earthquake preparedness plans they displayed more confidence in their ability to carry out their responsibilities in the event of a major earthquake. The situation cards and corresponding questions given to the staff previously (Table 1) were used again as a final assessment of their knowledge of the new

earthquake plan. There were 141 correct responses out of a possible 153 responses (92.2 percent correct). This shows an increase of 68.2 percent. Table 2 provides this information.

Table 2
Staff Questionnaire Response
Results After Implementation

Question Number	Teacher Identification Number								
	1	2	3	4	5	6	7	8	9
1	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C
5	C	C	I	C	C	C	C	C	I
6	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C
9	C	C	C	I	C	C	C	C	C
10	C	C	I	I	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C
12	C	C	C	I	C	C	C	C	I
13	C	C	C	C	C	C	C	C	C
14	C	C	C	I	C	C	C	C	C
15	C	C	C	I	C	C	C	C	I
16	C	C	C	C	C	C	C	C	C
17	C	C	C	I	C	C	C	C	I

C = Correct I = Incorrect

Clearly the teachers have demonstrated a marked increase in their knowledge and have come very close to achieving the objective of all questions being answered correctly. After the final test scores were reviewed the incorrect answers were discussed with individual teachers in order to assure proper execution of the earthquake plan.

Educating the parents was an important step in the implementation of the earthquake plan. The monthly parent newsletter was utilized as a means of announcing plans for the earthquake project and inviting parents to become actively involved. A large, colorful poster was placed in the lobby of the child care center for parents to volunteer to bring supplies and to help in other ways such as securing furniture, storage of supplies and participation in the practice earthquake drill.

Many parents quickly volunteered to help and almost all the supplies requested were donated.

At this time a letter was sent home to parents giving detailed information regarding location of the evacuation site and reunification policies.

The final aspect of the parent education component was the development of a survey (Appendix B) asking parents to respond to questions regarding their knowledge of the new earthquake procedures. The assistant directors were responsible for providing the surveys to parents and collecting them daily for one week.

It quickly became apparent that parents were not filling out the surveys. Teachers in each classroom (where the surveys were located) were asked to encourage parents to fill out the surveys and to review the answers once it had been completed. The parent responses came very close to achieving the objective of 100 percent. There were 200 possible correct answers, and 194 questions were answered correctly. This corresponds to 97 percent correct. The only question missed was in regard to the location of the evacuation site.

It has been suggested that this information be printed in each monthly newsletter in the hope of continuing to reach each family. Earthquake procedures will be included in the Admissions and Operating Policy included in the registration packet for parents new to the school. Table 3, which follows, provides the results of the parent survey.

Table 3

Parent Survey Response

Parent Number	Question No. 1	2	3	4	Parent Number	Question No. 1	2	3	4
1	I	C	C	C	26	C	C	C	C
2	C	C	C	C	27	C	C	C	C
3	I	C	C	C	28	C	C	C	C
4	C	C	C	C	29	C	C	C	C
5	C	C	C	C	30	C	C	C	C
6	C	C	C	C	31	I	C	C	C
7	C	C	C	C	32	C	C	C	C
8	C	C	C	C	33	C	C	C	C
9	C	C	C	C	34	C	C	C	C
10	C	C	C	C	35	C	C	C	C
11	C	C	C	C	36	C	C	C	C
12	C	C	C	C	37	C	C	C	C
13	C	C	C	C	38	C	C	C	C
14	C	C	C	C	39	C	C	C	C
15	C	C	C	C	40	C	C	C	C
16	C	C	C	C	41	I	C	C	C
17	C	C	C	C	42	C	C	C	C
18	C	C	C	C	43	C	C	C	C
19	C	C	C	C	44	C	C	C	C
20	C	C	C	C	45	I	C	C	C
21	I	C	C	C	46	C	C	C	C
22	C	C	C	C	47	C	C	C	C
23	C	C	C	C	48	C	C	C	C
24	C	C	C	C	49	C	C	C	C
25	C	C	C	C	50	C	C	C	C

C = Correct I = Incorrect

The final component of the earthquake plan was to prepare the children for a major earthquake. Teachers were given copies of curriculum material from the FEMA Earthquake Curriculum Guide. This material covered the topics of earthquake identification, safety and evacuation procedures. Several different education materials were used as a follow-up of the group earthquake discussion in each classroom. Pictures were displayed, a children's videotape of earthquake safety was shown and a flannel board story was presented and then made available for the children to use themselves. Children had the opportunity to play earthquake, making a variety of types of structures fall, as well as practice earthquake drills in their classroom.

While the teaching strategies used differed from class to class according to the ages of the children, all teachers used the same instructions when practicing earthquake drills in order to provide consistency throughout the school. The teachers began their instructions by loudly calling "earthquake, earthquake, drop down, drop down," and clapping their hands at the same time. Children were taught to immediately drop to the floor, curl up and cover their heads. The teachers also dropped to the floor, covering their head and holding onto a piece of sturdy furniture. This procedure was practiced repeatedly prior to an all school evacuation drill.

A practice evacuation was held at a peak time of day when

the largest number of children were in attendance. At a specified time teachers gave the earthquake signal in each classroom whereupon the children and teachers dropped to the floor. Following this, all classrooms were taken to the evacuation site, with teachers taking out the duffle bags containing the classroom mini emergency kits. The staff proceeded with their assignments, determining building safety, bringing out emergency supplies, setting up an area for reuniting children with their parents and an Operations Coordination area. Several parents volunteered to participate in the drill by coming to pick up their child at the evacuation site.

The primary objective of the drill was to evaluate the children's ability to follow their teacher's instructions including immediately dropping to the floor and then proceeding to evacuate in a orderly manner. The drill was observed by the campus emergency coordinator who, with information gathered from teachers noted that approximately ten percent of the children hesitated before dropping to the floor, though all children eventually dropped to the floor with their teacher's encouragement. This figure met the objective of 90 percent of the children dropping to the floor immediately. All classrooms were able to evacuate the building in a timely manner to the assembly area and were observed maintaining a calm attitude at the evacuation site as staff members proceeded to carry out their assignments.

The evacuation procedure was very similar to monthly fire drills, therefore this was not new to the children.

The campus emergency coordinator has recommended monthly earthquake drills (drop and evacuate) as a means of giving the children consistent exposure to the practice of following the instructions to drop to the floor. It is anticipated that as the children practice each month, they will become more familiar with the drop procedure and will not hesitate.

The campus emergency coordinator also recommended that twice a year the entire procedure be enacted with staff members completing their emergency assignment in order to maintain the staff's confidence. This procedure would also serve as a maintenance check of all emergency equipment and supplies.

There have been many benefits gained for this practicum to develop a comprehensive earthquake plan for the child care center. Most importantly the present plan meets new state and local guidelines for earthquake preparedness.

As staff and members of the campus parent club have worked to complete each phase of the project, their new knowledge about earthquake preparedness has resulted in a lessening of fears. Teachers have increased confidence in their ability to carry out their emergency assignments and ultimately provide a safe environment for the children at the child care center. The parent club has become very supportive of all of the child care center activities as they have

witnessed the staff's commitment to preparing for the well being of their children.

Children have gained new insight into a natural phenomenon that is a fact of life in California. Many of the four and five year olds tell visitors that "everything is bolted down, even the fish tank, so it won't fly around the room when we have an earthquake".

Information about this project has been highlighted in the campus newspaper on several occasions. As the college is just beginning its earthquake preparedness plan the author has been asked to serve on a committee for the development of the campus emergency plan.

The advisory team of emergency specialists has provided valuable expertise throughout the earthquake preparedness project. Due to this unique safety requirement of a school for preschool age children the advisory team has made recommendations for building safety and appropriate storage of supplies which was not available through other documented research channels. Through the involvement with the emergency specialists on the advisory team the child care center has been asked to be the site of a city wide emergency conference for educators to be held in the spring, 1991. Locally three child care facilities in the county have requested information and assistance with their own earthquake plans.

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Appendix A: Situation Cards for Measurement of Teachers' Knowledge

Situation 1

It is 12:00 noon. The children are eating lunch next to the windows when suddenly you feel a sharp jolt. A strong earthquake causes a hanging plant to swing into the windows and shatter glass on the children, injuring several of them. There could be an aftershock within minutes.

* Who will administer first aid?
* Who will check utilities and if necessary turn off the water and electricity?
* Who will check the evacuation route to see if it is clear?
* How will contact be made with emergency response agencies?

Situation 2

It is 5:00 p.m. It is dark outside and pouring rain. An earthquake has just occurred, leaving the center temporarily without power for lights. It is pitch dark. Parents are arriving to pick up their children. There is a fair amount of confusion.

* Do we have an alternate source of power?
* How will children be accounted for?
* How will you determine if it is necessary to evacuate

children? Where will children be taken?

* How will children be calmed?

Situation 3

It is 9:15 a.m. You hear a rumbling noise quickly followed by a gentle rolling of the earth. The building sways slightly. You immediately give the drop command to the older children. The staff drop in place, keeping their eyes on the children. A few seconds later the shaking returns, but much more violently than before. Within 30 seconds, many of the center's furnishings have toppled and are strewn about the room. You remember that the earthquake plan is filed in a cabinet across the room.

* How can you make the facility free of non-structural hazards?
* How will you respond to the earthquake if you are unable to read a plan or refer to documented procedures?
* Who will conduct a search and rescue operation?
* What will you do if the only person who knows first aid is the one injured and unable to perform?
* Who will provide children with identification tags?
* How will parents know what has happened to their children?

Situation 4

It is 2:00 p.m. A moderately strong earthquake strikes. The shaking lasts for a few seconds. One of the staff lets

out a scream. The phones are not working. New cracks are visible in the wall. Someone turns on the radio for reports of damage in the region.

* How will parents be contacted?
* How will staff decide if the center needs to be evacuated?
* What will staff do if parents descend on the center or, once the phones start working, tie up all the phone lines?

Appendix B: EARTHQUAKE AWARENESS SURVEY

PARENTS!

The earthquake preparedness project at the child care center is almost complete. We have secured furniture and equipment in the classrooms, stored ample food and medical supplies for the children and staff for the recommended 72 hours, educated staff members and practiced earthquake procedures with the children. In the event of a major earthquake we feel confident in our ability to care for the children until they can be reunited with their parents.

Please take a few minutes to fill in the following survey so that we can be sure the reunification procedure will work smoothly.

1. In the even of a major earthquake the children will be evacuated first to _____. If this location is deemed unsafe the secondary evacuation site is _____.
2. Parents are to go to the _____ to receive information about the location of their child.
3. In following recommended procedures parents should call / not call the child care center before coming to get their child. (circle one)
4. When parents arrive at the evacuation site they must have with them _____ in order to have their child released to them.

Thank you! We appreciate your cooperation in this important safety project.

Appendix C: EARTHQUAKE PREPAREDNESS SUPPLIES

Master Supply List

Search and Rescue
flash light, batteries
crowbar (3 foot)
shovel
work or garden gloves
hammer, pliers, crescent wrench
rope (50-100 feet)
dust mask, eye goggles
roll of yellow caution tape
whistle
wire cutters
hack saw

First Aid
band aids
tongue depressors--finger splints
disposable thermometers
safety pins
disinfectant soap
first aid handbook
sanitary napkins--bandages, padding
kleenex
plastic trash bags (ziplock)
pencil, pen, notebook
scissors, tape, gauze pads
tweezers
Rubbing Alcohol
clean sheet

****Classroom Kits: First Aid**
1 box band aids
disinfectant soap
small tape
thermometers
cotton balls, Q-tips

Shelter and Sanitation
aluminum foil
large wooden spoon
12' x 100' tarp
empty coffee cans--mixing
plastic buckets
plastic can liners
masking tape
notebook, pens
toilet paper, paper towels
hand soap

Food and Water
water
peanut butter
canned fruit
applesauce
tuna, canned meat
instant oatmeal
soup
crackers
tang
canned vegetables
juice concentrate

Communication
portable radio
batteries
two-way radio
pen, pencil
notebook

Classroom Kits
mini kits
First aid supplies
whistle
name tags
class roster
I.D. cards
flashlight
batteries
pen, notebook

Appendix D: EARTHQUAKE INSTRUCTIONS FOR PARENTS

Child's Emergency Kit

The child care center is equipped with ample medical supplies, water and some food items. It is necessary for each child to have his or her own mini-emergency kit of personal supplies.

In a zip lock bag (no larger than a one gallon size bag) place the following items:

1. Change of clothes (shirt, pants, underwear)
2. Emergency blanket (also called "space" or hypo-thermia blanket, available at sporting goods stores)
3. Any medication a child must take with a written permission from your doctor
4. Three small pre-packaged food items (cheese and cracker packs, granola bar, fruit roll, package of raisins and nuts, individual serving of tuna, etc.)

Tape a name card on the upper right hand corner of the bag. On the name card include: child's name, address, phone number, both local and out of state for family contact (include area code). We ask each student and staff member to bring $2.00 to buy emergency supplies. The $2.00 and the emergency kit should be brought to the center within ten days.

Evacuation and Reunification Procedures

In the event of a major earthquake all children will be evacuated to the play yard. If this area is determined to be unsafe, children and staff will move to the campus track. An evacuation center will be established there until a building on campus has been designated as a relocation center. Parents should come to the child care center to receive information about the location of their child on campus. DO NOT CALL THE CENTER. If you are jamming the phone line, no one will get through, and, more importantly, we will not be able to call out for the emergency help we night need. DO COME TO THE PLANNED EVACUATION SITE WITH IDENTIFICATION. Children will only be released to parents or people listed on the authorization list. DO TRUST US. We have an emergency plan and staff trained in first aid and CPR. We will stay and do everything we can until all children have been reunited with their family.

Appendix E: Earthquake Hazards

Objects on high shelves (toys, plants, books)

Free standing cabinets, bookcases, wall shelves and their contents which can fall

Fluorescent light fixtures without safety wires

Ceiling tiles not properly secured

Hanging plants or mobiles

Glass that may shatter (windows, mirrors)

Pianos or other objects on wheels

Objects blocking exits

Aquariums and animal cages not secured

Wall-mounted objects (maps, bulletin boards, clocks, projections screens) not bolted to wall studs

Water heaters not bolted or braced to wall studs

File cabinets not bolted to wall studs

Desk top objects not secured (telephones, typewriters, computers, calculators)